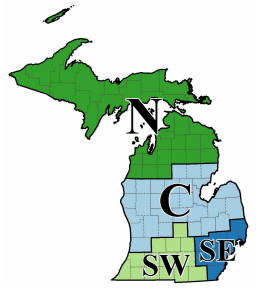

MI FluFocus

Influenza Surveillance Updates
Bureaus of Epidemiology and Laboratories

Michigan Department of Community Health
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Current Influenza Activity Levels:

- **Michigan:** No activity
- **United States:** Reporting has concluded for the 2009-2010 influenza season

Updates of Interest:

- **International:** Influenza H1N1 (2009) virus transmission remains locally intense in parts of India and New Zealand.

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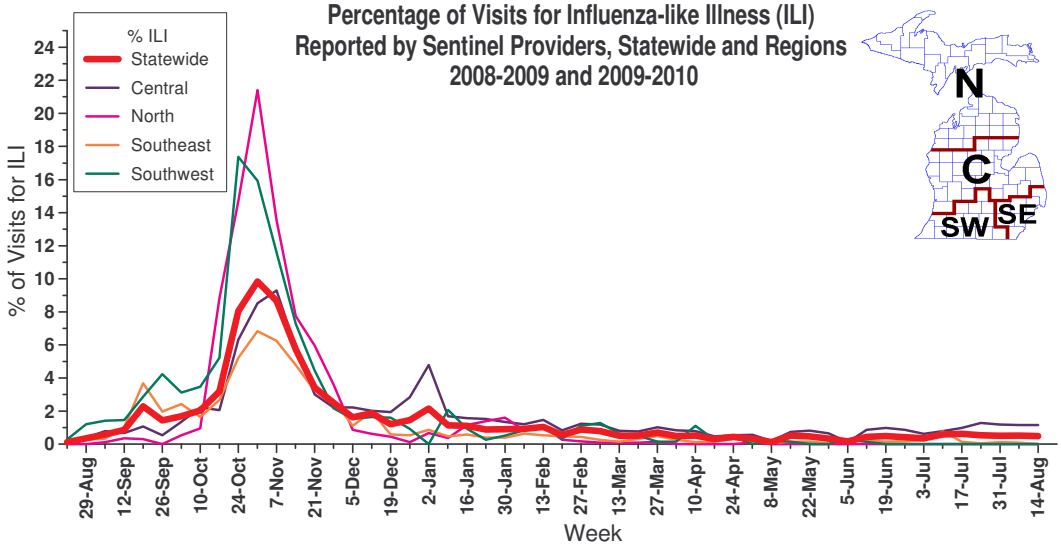
Influenza Surveillance Reports

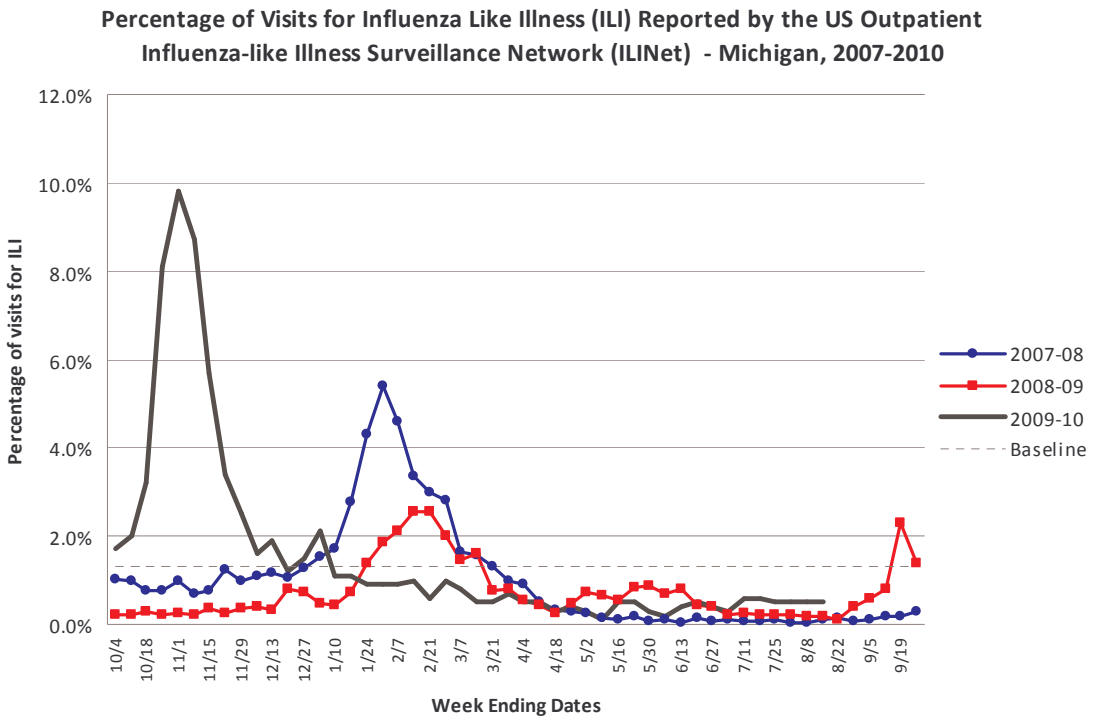
Michigan Disease Surveillance System: MDSS data for the week ending August 14th indicated that aggregate influenza case reports remained at baseline summer levels. Individual reports, including influenza and 2009 novel influenza cases, remained near the previous week's reported levels of little to no activity. Aggregate influenza cases are similar to levels seen during the same reporting period in 2009, while individual influenza reports are slightly lower.

Emergency Department Surveillance: Emergency department visits from both constitutional and respiratory complaints were comparable to the previous week's levels. Both constitutional and respiratory complaints are at similar levels compared to the same reporting period last year. In the past week, there were five constitutional alerts in the N (3), SW(1) and C(1) Influenza Surveillance Regions and two respiratory alerts in the C Region.

Over-the-Counter Product Surveillance: Over the past week, all OTC product sales remained similar to last week's levels. When compared to this time last year, sales of chest rubs and cough/cold medications are slightly increased, unpromoted children's electrolytes are slightly decreased, and thermometers are similar.

Sentinel Provider Surveillance (as of August 19): During the week ending August 14, 2010, the proportion of visits due to influenza-like illness (ILI) remained at low levels at 0.5% overall. Thirty-four patient visits due to ILI were reported out of 6,888 office visits. Twenty-three sentinel sites provided data for this report. Activity remained the same in one surveillance region: Central (1.1%), and no ILI activity was reported in the remaining three regions: Southeast, Southwest and North. Please note these rates may change as additional reports are received.





As part of pandemic influenza surveillance, CDC and MDCH highly encourage year-round participation from all sentinel providers. New practices are encouraged to join the sentinel surveillance program today! Contact Cristi Carlton at 517-335-9104 or CarltonC2@michigan.gov for more information.

Laboratory Surveillance (as of August 14): During August 8-14, no influenza isolates were identified at the MDCH Bureau of Laboratories. For the 2009-2010 season (starting on October 4, 2009), MDCH BOL has identified 614 influenza isolates:

- 2009 Influenza A (H1N1): 610
- Influenza A (H3): 3
- Influenza B: 1

Six sentinel laboratories reported for the week ending August 14, 2010. All laboratories (SE, SW, C, N) reported no influenza A or B positive test results, with very few specimens being tested.

Michigan Influenza Antigenic Characterization (as of August 19): One 2009 H1N1 influenza A virus from Michigan has undergone further characterization at the CDC. This virus was characterized as A/California/07/2009 (H1N1)-like, which is the recommended strain for the H1 component of the 2010-11 Northern Hemisphere vaccine.

Michigan Influenza Antiviral Resistance Data (as of August 19): MDCH has received 34 results for antiviral resistance testing for the 2009-2010 season. All of the specimens tested were pandemic 2009 influenza A (H1N1) viruses. Of these results, two viruses have shown resistance to oseltamivir. The first virus was obtained in November 2009 from a 3 year old child from the SE Region with an underlying immunosuppressive condition and had a multiple courses of oseltamivir prior to specimen collection. The second virus was obtained in December 2009 from a 52 year old from the SE Region with an underlying immunosuppressive condition and chronic pulmonary infection; laboratory testing has confirmed that this mutation occurred within the patient during his illness. The 34 specimens tested were distributed as follows: 9 Southeast, 8 Southwest, 9 Central, 2 North, 6 unknown.

Antiviral resistance testing takes months to complete and cannot be used to guide individual patient treatment. However, CDC has made recommendations regarding the use of antivirals for treatment and prophylaxis of influenza. The guidance is available at http://www.cdc.gov/H1N1flu/recommendations.htm.

Influenza-Associated Pediatric Mortality (as of August 19): Five 2009 H1N1 influenza-associated pediatric mortalities (SE(3), SW, N) have been reported to MDCH for the 2009-2010 influenza season.

***CDC has asked states for information on any pediatric death associated with influenza. This includes not only any pediatric death (<18 years) resulting from a compatible illness with laboratory confirmation of influenza, but also any unexplained pediatric death with evidence of an infectious process. Please

immediately call MDCH to ensure proper specimens are obtained. View the complete MDCH protocol online at http://www.michigan.gov/documents/mdch/ME_pediatric_influenza_guidance_v2_214270_7.pdf.

Influenza Congregate Settings Outbreaks (as of August 19): Seven congregate setting outbreaks with confirmatory novel influenza A H1N1 testing (2SE, 3 SW, 1C, 1N), and three outbreaks associated with positive influenza A tests (2C, 1N) have been reported to MDCH for the 2009-2010 influenza season. These are 8 school facilities and 2 long term care facilities. Human metapneumovirus was confirmed in one outbreak in a long term care facility (SW) in February. Adenovirus was confirmed from one outbreak in an elementary school (SW) in May.

During fall 2009, 567 influenza-related school and/or district closures in Michigan (Public Health Preparedness Region 1 - 55, Region 2N - 4, Region 2S – 8, Region 3 - 54, Region 5 - 153, Region 6 - 100, Region 7 - 109, Region 8 - 84) were reported.

National: To access previous Center for Disease Control and Prevention weekly surveillance reports, visit http://www.cdc.gov/flu/weekly/fluactivity.htm.

International (WHO Update 113 [edited], August 13): Influenza H1N1 (2009) virus transmission remains locally intense in parts of India and New Zealand.

In India, the number of new H1N1 (2009) cases per week, including fatal cases, continued to increase since mid June 2010 in several states, particularly in the western state of Maharashtra and to a lesser extent in Gujarat, Andhra Pradesh, and West Bengal. The current epidemic of influenza H1N1 (2009) does not appear to have peaked yet in these states. Overall, 79 new laboratory confirmed H1N1 (2009) associated deaths were officially reported across India during the week of August 2-8. During last two weeks of July 2010, more than 1/3 of respiratory specimens tested positive for influenza virus in the state of Maharashtra, all of which were H1N1 (2009). In the southern Indian state of Kerala, where recent influenza activity in India was first detected, transmission of H1N1 (2009) virus appears to have peaked during late June and early July 2010 and has declined substantially since. Seasonal influenza B viruses are also known to be currently circulating in India, although at lower levels than H1N1 (2009) viruses.

In New Zealand, the national consultation rate for ILI continued to increase, particularly in recent weeks, passing the seasonal baseline during the last week of July 2010. The majority of influenza viruses detected during the current winter epidemic have been H1N1 (2009). Influenza activity (as indicated by rates of ILI, hospitalizations, and absenteeism) has been geographically uneven but focally intense in some areas, particularly those areas that experienced milder epidemics during the previous winter 2009 pandemic wave. Nationally, overall rates of ILI and numbers of severe and fatal cases remain well below levels seen during the winter 2009 pandemic wave, however, the situation continues to evolve and the current epidemic has yet to peak.

Except in South Africa and New Zealand, overall influenza activity and rates of respiratory diseases remained low in other countries of the temperate southern hemisphere (Australia, Chile, and Argentina). In South Africa, active circulation of seasonal influenza H3N2 and type B viruses was observed during June and July 2010.

Influenza H1N1 (2009) continued to circulate at low to moderate levels over the past month in the tropics of the Americas (Costa Rica, Colombia, Peru, Bolivia, Brazil), West Africa (Ghana), and South and Southeast Asia (India, Bangladesh, Thailand, Cambodia, Singapore, Malaysia).

Variable circulation of seasonal influenza viruses continues to be detected in all regions of the world. Seasonal influenza H3N2 viruses have recently circulated in the tropics of the Americas (particularly in several Central American countries), in southern and western Africa, and in parts of Southeast Asia. The most active areas of influenza type B virus circulation continue to be in parts of central and southern Africa.

Weekly reporting of influenza activity to the CDC has concluded for the 2009-2010 season.

For additional flu vaccination and education information, the MDCH *FluBytes* newsletter is available at http://www.michigan.gov/mdch/0,1607,7-132-2940_2955_22779_40563-125027--,00.html.

Novel Influenza Activity and Other News

WHO Pandemic Phase: Post pandemic - Influenza disease activity has returned to levels normally seen for seasonal influenza. It is expected that the pandemic virus will behave as a seasonal influenza A virus. It is important to maintain surveillance and update pandemic preparedness/response plans accordingly.

International, Avian (The Jakarta Post [edited], August 16): Despite only very few cases of avian influenza being identified in the city this year, the administration [of Jakarta, Indonesia] is warning residents of the possibility of a future outbreak.

The head the city's Agriculture, Maritime and Animal Husbandry Agency, Jawilhija, said recent screenings of poultry samples in the city showed that 70 percent tested positive to bird flu. "Seventy percent of samples taken from the faeces of thousands of birds were avian flu positive, even though the birds appeared healthy," she told The Jakarta Post.

Jawilhija said it did not pose a danger to humans as long as the meat was cooked well.

Jakarta was one flash point of the country's avian flu outbreaks in the last five years, hosting 44 cases of the nationwide total of 162 last year, according to the WHO. This year, there have been two cases in the city, with the latest involving a 34-year-old woman from South Jakarta, who died early July.

"We have to be aware that avian flu is still in the city. Bird owners should not let their pets roam about in the neighborhood and should have them certificated," Jawilhija said.

The administration has issued a poultry restriction bylaw that regulates poultry distribution in the city. The bylaw includes the requirement of certificates for pet bird owners and the localization of poultry slaughterhouses to six areas on Jakarta's periphery.

The bylaw, however, has yet to be implemented due to widespread public criticism of the plan earlier this year.

One pet bird owner, Rudi Pelung, 42, a resident of Pondok Bambu in East Jakarta, said all his birds, mostly chickens, had been certificated as avian flu-free. "It is a part of my responsibility as a bird enthusiast. I have to worry about my pets," said Rudi, who owns 25 birds.

He said to get a certificate, officers from the agency would come and check the facilities provided for the birds, the birds themselves and whether they had been vaccinated.

As part of avian flu prevention, Rudi said kept as few birds as possible so they are easy to monitor.

"I make sure their cages are clean and they have proper ventilation and enough sunshine. The chickens should be treated regularly also," he said.

For birds smaller than 1 kilogram, however, vaccination is not recommended because it is ineffective.

Hasan Helmi, who owns 60 pigeons, said he tried to prevent his pets from avian flu by regularly feeding them vitamins and medication.

Every six months their faeces are checked to receive the free avian flu certificates. "The pigeons are an asset, I have to make sure they are in the best condition,"

According to Jawilhija, her agency has awarded certificates to 30,000 birds across the city.

International, Avian (CIDRAP, August 17): In an update today to the World Organization for Animal Health (OIE), Vietnam reported six H5N1 avian influenza outbreaks that were detected between early May and mid July. Two were in Thai Nguyen province in the northern part of the country and two were in Dak Lak province in central Vietnam. Quang Nam and Gia Lai provinces also reported outbreaks. Few details were provided about the type of poultry that were affected. One of the outbreaks in Thai Nguyen involved an unvaccinated duck flock. Among the six outbreaks, 6,057 birds died and 4,923 more were culled to control the virus. Epidemiologic investigations revealed that the source of the outbreaks included the introduction of new birds to flocks, illegal movement of animals, and fomites such as vehicles or animal feed. Vietnam is among a handful of countries where the H5N1 virus is endemic in poultry.

International, Swine (Emerging Infectious Diseases abstract, August 13): Nidom CA, Takano R, Yamada S, Sakai-Tagawa Y, Daulay S, Aswadi, D, et al. Influenza A (H5N1) viruses from pigs, Indonesia. Emerg Infect Dis. 2010 Oct; [Epub ahead of print]

Pigs have long been considered potential intermediate hosts in which avian influenza viruses can adapt to humans. To determine whether this potential exists for pigs in Indonesia, we conducted surveillance during 2005–2009. We found that 52 pigs in 4 provinces were infected during 2005–2007 but not 2008–2009. Phylogenetic analysis showed that the viruses had been introduced into the pig population in Indonesia on at least 3 occasions. One isolate had acquired the ability to recognize a human-type receptor. No infected pig had influenza-like symptoms, indicating that influenza A (H5N1) viruses can replicate undetected for prolonged periods, facilitating avian virus adaptation to mammalian hosts. Our data suggest that pigs are at risk for infection during outbreaks of influenza virus A (H5N1) and can serve as intermediate hosts in which this avian virus can adapt to mammals.

Ed. note: The entire article is available online at http://www.cdc.gov/eid/content/16/10/PDFs/10-0508.pdf.

Michigan Wild Bird Surveillance (USDA, as of August 19): For the 2010 season (April 1, 2010-March 31, 2011), highly pathogenic avian influenza H5N1 has not been recovered from 9,998 samples tested nationwide, including 673 Michigan samples (5 live bird, 658 hunter-killed birds, 10 morbidity/mortality). For more information, visit the HPAI Early Detection Data System at http://wildlifedisease.nbii.gov/ai/.

To learn about avian influenza surveillance in Michigan wild birds or to report dead waterfowl, go to Michigan's Emerging Disease website at http://www.michigan.gov/emergingdiseases.

International Poultry and Wild Bird Surveillance (OIE): Reports of avian influenza activity, including summary graphs of avian influenza H5N1 outbreaks in poultry, can be found at the following website: http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm.

For questions or to be added to the distribution list, please contact Susan Peters at PetersS1@michigan.gov

Contributors

MDCH Bureau of Epidemiology - Sally Bidol, MPH; Cristi Carlton, MPH; Edward Hartwick, MS

MDCH Bureau of Laboratories – Anthony Muyombwe, PhD; Victoria Vavricka, MS

Table 1. H5N1 Influenza in Humans - Cases up to August 12, 2010. http://www.who.int/csr/disease/avian_influenza/country/cases_table_2010_08_12/en/index.html. Downloaded 8/12/2010. Cumulative number of lab-confirmed cases reported to WHO. Total cases includes deaths.

Country	2003		2004		2005		2006		2007		2008		2009		2010		Total	
	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	10	8
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	1	1	39	26
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	21	8	111	35
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	6	5	168	139
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	3	2
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	119	59
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	36	17	504	299